

## CLAIMS

### What is claimed is:

1. A configuration system for use in a process plant having a process control system that performs manufacturing related control functions with respect to the process plant and a safety system that performs safety related control functions with respect to the process plant, comprising:

a computer having a processor and a memory;

a process control system controller communicatively coupled to the computer and adapted to perform process control functionality using one or more process control field devices;

a safety system controller communicatively coupled to the computer and adapted to perform safety system functionality using one or more safety system field devices;

a configuration database adapted to store configuration data related to both the process control system and to the safety system; and

a configuration application stored on the memory of the computer and adapted to be executed on the processor to use the configuration database to enable one or more users to perform configuration of both the process control system and the safety system.

2. The configuration system of claim 1, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity.

3. The configuration system of claim 1, wherein the configuration application is adapted to present a display illustrating a configuration of a portion of the process control system and of a portion of the safety system.

4. The configuration system of claim 1, wherein the configuration application is adapted to enable the creation of a first logic module to be implemented in the process control system and the creation of a second logic module to be implemented in the safety system.

5. The configuration system of claim 4, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the first logic module may be created using a first one of the user accounts and the second logic module may be created using a second one of the user accounts.

6. The configuration system of claim 4, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the first and second logic modules may be created using the same user account.

7. The configuration system of claim 1, wherein the configuration application is adapted to enable a first logic module to be downloaded to the process control system and a second logic module to be downloaded to the safety system.

8. The configuration system of claim 7, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the first logic module may be downloaded using a first one of the user accounts and the second logic module may be downloaded using a second one of the user accounts.

9. The configuration system of claim 7, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the first and second logic modules may be downloaded using the same user account.

10. The configuration system of claim 1, wherein the configuration database stores tags for both process control system entities and safety system entities using a common tagging format.

11. The configuration system of claim 1, wherein the configuration database stores names for both process control system entities and safety system entities using a common naming format that provides a unique name for each of the process control system entities and the safety system entities.

12. The configuration system of claim 1, wherein the configuration database stores parameter references for both the process control system and the safety system using a common reference format.

13. The configuration system of claim 1, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity and wherein the configuration database stores the access privileges for both the process control system and the safety system to define access rights associated with the one or more user accounts.

14. The configuration system of claim 1, wherein the configuration application is adapted to present a display illustrating a configuration of a portion of the process control system in a process control system portion of the display and a portion of the safety system in a safety system portion of the display and to enable one or more users to configure the process control system or the safety system using the display.

15. The configuration system of claim 14, wherein the configuration application is adapted to enable the one or more users to configure the process control system or the safety system by associating a first element in the process control system portion of the display with a second element in the safety system portion of the display.

16. The configuration system of claim 14, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the configuration application is adapted to enable preferences to be set for a particular user account to indicate which portions of the process control system and which portions of the safety system to present on the display when using the particular user account.

17. The configuration system of claim 1, wherein the configuration application is adapted to present a display illustrating a configuration of at least a portion of the process plant, the display including a first section associated with the process control system and a second section associated with the safety system, wherein the first section includes a first level identifying one or more process control system controllers and a second level identifying one or more process control system field devices coupled to the one or more process control system controllers, and wherein the second section includes a first level identifying one or more safety system controllers and a second level identifying one or more safety system field devices coupled to the one or more safety system controllers.

18. The configuration system of claim 1, wherein the configuration application is adapted to enable control logic that is to be executed within a portion of the process control system and to enable safety logic that is to be executed within a portion of the safety system to be created independently of specifying the process control devices and the safety system devices in which the control logic and the safety logic is to be executed.

19. The configuration system of claim 18, wherein the portion of the process control system and the portion of the safety system are associated with the same area within the process plant.

20. The configuration system of claim 1, wherein the configuration application is adapted to enable a control logic module that is to be executed within a portion of the process control system to reference a safety system logic module that is to be executed within a portion of the safety system or to enable a safety system logic module that is to be executed within a portion of the safety system to reference a control logic module that is to be executed within a portion of the process control system to thereby provide direct communications between the control logic module and the safety logic module.

21. The configuration system of claim 22, wherein the control logic module references the safety logic module or the safety logic module references the control logic module using a name and parameter referencing scheme.

22. The configuration system of claim 1, wherein the configuration database is adapted to store configuration data related the process control system and configuration data related to the safety system as being associated with a common entity within the process plant.

23. The configuration system of claim 22, wherein the common entity is an area of the process plant.

24. The configuration system of claim 1, further including a database management routine that is adapted to perform a database management activity on both the process control system configuration data and the safety system configuration data stored in the configuration database.

25. The configuration system of claim 24, wherein the database management routine is one of a backup routine adapted to back up the configuration database, and an import routine adapted to import data into the configuration database.

26. A configuration system for use in a process plant having a process control system with a process control system controller that performs manufacturing related control functions using one or more process control field devices, a safety system with a safety system controller that performs safety related control functions using one or more safety system field devices, and a computer having a processor communicatively coupled to the process control system controller and to the safety system controller, the configuration system comprising:

a memory;

a configuration database adapted to store configuration data related to both the process control system and to the safety system; and

a configuration application stored on the memory and adapted to be executed on the processor to use the configuration database to enable one or more users to perform configuration of both the process control system and the safety system.

27. The configuration system of claim 26, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity.

28. The configuration system of claim 26, wherein the configuration application is adapted to present a display illustrating a configuration of a portion of the process control system and of a portion of the safety system.

29. The configuration system of claim 26, wherein the configuration application is adapted to enable the creation of a first logic module to be implemented in the process control system and the creation of a second logic module to be implemented in the safety system.

30. The configuration system of claim 26, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the first logic module may be created using a first one of the user accounts and the second logic module may be created using a second one of the user accounts.

31. The configuration system of claim 26, wherein the configuration application is adapted to enable a first logic module to be downloaded to the process control system and a second logic module to be downloaded to the safety system.

32. The configuration system of claim 31, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the first and second logic modules may be downloaded using the same user account.

33. The configuration system of claim 26, wherein the configuration database stores tags for both process control system entities and safety system entities using a common tagging format.

34. The configuration system of claim 26, wherein the configuration database stores names for both process control system entities and safety system entities using a common naming format that provides a unique name for each of the process control system entities and the safety system entities.

35. The configuration system of claim 26, wherein the configuration database stores parameter references for both the process control system and the safety system using a common reference format.

36. The configuration system of claim 26, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity and wherein the configuration database stores the access privileges for both the process control system and the safety system to define access rights associated with the one or more user accounts.

37. The configuration system of claim 26, wherein the configuration application is adapted to present a display illustrating a configuration of a portion of the process control system in a process control system portion of the display and a portion of the safety system in a safety system portion of the display and to enable the one or more users to configure the process control system or the safety system using the display.

38. The configuration system of claim 37, wherein the configuration application is adapted to enable the one or more users to configure the process control system or the safety system by associating a first element in the process control system portion of the display with a second element in the safety system portion of the display.

39. The configuration system of claim 38, wherein the configuration application can be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and wherein the configuration application is adapted to enable preferences to be set for a particular user account to indicate which portions of the process control system and which portions of the safety system to present on the display when using the particular user account.



40. The configuration system of claim 26, wherein the configuration application is adapted to present a display illustrating a configuration of at least a portion of the process plant, the display including a first section associated with the process control system and a second section associated with the safety system, wherein the first section includes a first level identifying one or more process control system controllers and a second level identifying one or more process control system field devices coupled to the one or more process control system controllers, and wherein the second section includes a first level identifying one or more safety system controllers and a second level identifying one or more safety system field devices coupled to the one or more safety system controllers.

41. The configuration system of claim 26, wherein the configuration application is adapted to enable control logic that is to be executed within a portion of the process control system and to enable safety logic that is to be executed within a portion of the safety system to be created independently of specifying the process control devices and the safety system devices in which the control logic and the safety logic is to be executed.

42. The configuration system of claim 42, wherein the portion of the process control system and the portion of the safety system are associated with the same area within the process plant.

43. The configuration system of claim 26, wherein the configuration application is adapted to enable a control logic module that is to be executed within a portion of the process control system to reference a safety system logic module that is to be executed within a portion of the safety system or to enable a safety system logic module that is to be executed within a portion of the safety system to reference a control logic module that is to be executed within a portion of the process control system to thereby provide direct communications between the control logic module and the safety logic module.

44. The configuration system of claim 43, wherein the control logic module references the safety logic module or the safety logic module references the control logic module using a name and parameter referencing scheme.

45. The configuration system of claim 26, wherein the configuration database is adapted to store configuration data related the process control system and configuration data related to the safety system as being associated with a common entity within the process plant.

46. The configuration system of claim 26, further including a database management routine that is adapted to perform a database management activity on both the process control system configuration data and the safety system configuration data stored in the configuration database.

47. The configuration system of claim 46, wherein the database management routine is one of a backup routine adapted to back up the configuration database and an import routine adapted to import data into the configuration database.

48. A method of configuring a process plant having a process control system with a process control system controller that performs manufacturing related control functions using one or more process control field devices and a safety system with a safety system controller that performs safety related control functions using one or more safety system field devices, the method comprising:

storing configuration data related to both the process control system and to the safety system in a common configuration database; and

providing a common user interface application that performs configuration activities for both the process control system and the safety system using the configuration data stored in the common configuration database.

49. The method of claim 48, wherein providing a common user interface application includes establishing one or more user accounts for the common user interface application, wherein each user account includes access privileges for a separate user entity.

50. The method of claim 48, wherein providing a common user interface application includes presenting a single user display illustrating a configuration of a portion of the process control system and of a portion of the safety system.

51. The method of claim 48, wherein providing a common user interface application includes enabling the creation of a first logic module to be implemented in the process control system and enabling the creation of a second logic module to be implemented in the safety system using the common user interface application.

52. The method of claim 51, wherein providing a common user interface application includes establishing one or more user accounts for the common user interface application, wherein each user account includes access privileges for a separate user entity, and enabling the first logic module to be created using a first one of the user accounts and enabling the second logic module to be created using a second one of the user accounts.

53. The method of claim 48, wherein providing a common user interface application includes establishing one or more user accounts for the common user interface application, wherein each user account includes access privileges for a separate user entity, and enabling the first and second logic modules to be created using the same user account.

54. The method of claim 48, wherein providing a common user interface application includes enabling a first logic module to be downloaded to the process control system and a second logic module to be downloaded to the safety system using the common user interface application.

55. The method of claim 54, wherein providing a common user interface application includes establishing one or more user accounts for the common user interface application, wherein each user account includes access privileges for a separate user entity, and including enabling the first logic module to be downloaded using a first one of the user accounts and enabling the second logic module to be downloaded using a second one of the user accounts.

56. The method of claim 54, wherein providing a common user interface application includes establishing one or more user accounts for the common user interface application, wherein each user account includes access privileges for a user entity, and including enabling the first logic module and the second logic module to be downloaded using the same one of the user accounts.

57. The method of claim 48, wherein storing configuration data includes storing tags for both process control system entities and safety system entities using a common tagging format.

58. The method of claim 48, wherein storing configuration data includes storing names for both process control system entities and safety system entities using a common naming format that provides a unique name for each of the process control system entities and the safety system entities.

59. The method of claim 48, wherein storing configuration data includes storing parameter references for both the process control system and the safety system using a common reference format.

60. The method of claim 48, wherein providing a common user interface application includes presenting a display on a display screen illustrating a configuration of a portion of the process control system in a process control system portion of the display and illustrating a portion of the safety system in a safety system portion of the display and enabling one or more users to configure the process control system or the safety system using the display.

61. The method of claim 60, wherein enabling one or more users to configure the process control system or the safety system using the display includes enabling the one or more users to associate a first element in the process control system portion of the display with a second element in the safety system portion of the display.

62. The method of claim 60, including enabling the common user interface application to be accessed via one or more user accounts, wherein each user account includes access privileges for a separate user entity, and including enabling preferences to be set for a particular user account to indicate which portions of the process control system and which portions of the safety system to present on the display when using the particular user account.

63. The method of claim 48, wherein providing a common user interface application includes enabling control logic that is to be executed within a portion of the process control system and to enabling safety logic that is to be executed within a portion of the safety system to be created independently of specifying the process control devices and the safety system devices in which the control logic and the safety logic is to be executed.

64. The method of claim 63, wherein the portion of the process control system and the portion of the safety system are associated with the same area within the process plant.

65. The method of claim 48, wherein providing a common user interface application includes enabling a control logic module that is to be executed within a portion of the process control system to reference a safety system logic module that is to be executed within a portion of the safety system or enabling a safety system logic module that is to be executed within a portion of the safety system to reference a control logic module that is to be executed within a portion of the process control system to thereby provide direct communications between the control logic module and the safety logic module.

66. The method of claim 48, including using the common user interface application to store configuration data related the process control system and configuration data related to the safety system as being associated with a common entity within the process plant.

67. The method of claim 48, further including using a single database management routine to perform a database management activities on both the process control system configuration data and the safety system configuration data stored in the configuration database.

68. The method of claim 67, wherein using a single database management routine includes using one of a back up routine adapted to back up the configuration database, and an import routine adapted to import data into the configuration database.